

0080

#2

OIPE

RAW SEQUENCE LISTING  
 PATENT APPLICATION: US/09/770,693

DATE: 02/08/2001  
 TIME: 12:26:28

**ENTERED**

Input Set : A:\C25011.app  
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3 <110> APPLICANT: Beer, Steven V.  
 4 Bauer, David W.  
 6 <120> TITLE OF INVENTION: OOMYCETE-RESISTANT TRANSGENIC PLANTS BY VIRTUE OF  
 7 PATHOGEN-INDUCED EXPRESSION OF A HETEROLOGOUS  
 8 HYPERSENSITIVE RESPONSE ELICITOR  
 10 <130> FILE REFERENCE: 19603/2501  
 C--> 12 <140> CURRENT APPLICATION NUMBER: US/09/770,693  
 C--> 13 <141> CURRENT FILING DATE: 2001-01-26  
 15 <150> PRIOR APPLICATION NUMBER: 60/178,565  
 16 <151> PRIOR FILING DATE: 2000-01-26  
 18 <160> NUMBER OF SEQ ID NOS: 26  
 20 <170> SOFTWARE: PatentIn Ver. 2.1  
 22 <210> SEQ ID NO: 1  
 23 <211> LENGTH: 338  
 24 <212> TYPE: PRT  
 25 <213> ORGANISM: Erwinia chrysanthemi  
 27 <400> SEQUENCE: 1  
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 31 Gly Leu Gly Ala Gln Gly Leu Lys Gly Leu Asn Ser Ala Ala Ser Ser  
 32 20 25 30  
 34 Leu Gly Ser Ser Val Asp Lys Leu Ser Ser Thr Ile Asp Lys Leu Thr  
 35 35 40 45  
 37 Ser Ala Leu Thr Ser Met Met Phe Gly Gly Ala Leu Ala Gln Gly Leu  
 38 50 55 60  
 40 Gly Ala Ser Ser Lys Gly Leu Gly Met Ser Asn Gln Leu Gly Gln Ser  
 41 65 70 75 80  
 43 Phe Gly Asn Gly Ala Gln Gly Ala Ser Asn Leu Leu Ser Val Pro Lys  
 44 85 90 95  
 46 Ser Gly Gly Asp Ala Leu Ser Lys Met Phe Asp Lys Ala Leu Asp Asp  
 47 100 105 110  
 49 Leu Leu Gly His Asp Thr Val Thr Lys Leu Thr Asn Gln Ser Asn Gln  
 50 115 120 125  
 52 Leu Ala Asn Ser Met Leu Asn Ala Ser Gln Met Thr Gln Gly Asn Met  
 53 130 135 140  
 55 Asn Ala Phe Gly Ser Gly Val Asn Asn Ala Leu Ser Ser Ile Leu Gly  
 56 145 150 155 160  
 58 Asn Gly Leu Gly Gln Ser Met Ser Gly Phe Ser Gln Pro Ser Leu Gly  
 59 165 170 175  
 61 Ala Gly Gly Leu Gln Gly Leu Ser Gly Ala Gly Ala Phe Asn Gln Leu  
 62 180 185 190  
 64 Gly Asn Ala Ile Gly Met Gly Val Gly Gln Asn Ala Ala Leu Ser Ala  
 65 195 200 205  
 67 Leu Ser Asn Val Ser Thr His Val Asp Gly Asn Asn Arg His Phe Val  
 68 210 215 220  
 70 Asp Lys Glu Asp Arg Gly Met Ala Lys Glu Ile Gly Gln Phe Met Asp  
 71 225 230 235 240

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73 Gln Tyr Pro Glu Ile Phe Gly Lys Pro Glu Tyr Gln Lys Asp Gly Trp
74          245          250          255
76 Ser Ser Pro Lys Thr Asp Asp Lys Ser Trp Ala Lys Ala Leu Ser Lys
77          260          265          270
79 Pro Asp Asp Asp Gly Met Thr Gly Ala Ser Met Asp Lys Phe Arg Gln
80          275          280          285
82 Ala Met Gly Met Ile Lys Ser Ala Val Ala Gly Asp Thr Gly Asn Thr
83          290          295          300
85 Asn Leu Asn Leu Arg Gly Ala Gly Gly Ala Ser Leu Gly Ile Asp Ala
86 305          310          315          320
88 Ala Val Val Gly Asp Lys Ile Ala Asn Met Ser Leu Gly Lys Leu Ala
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97 <212> TYPE: DNA
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103 gatctggtat ttacgttttg ggacaccggg cgtgaactca tgatgcagat tcagccgggg 180
104 cagcaatata ccggcatggt gcgcacgctg ctgcgtcgtc gttatcagca ggccggcagag 240
105 tgcgatggct gccatctgtg cctgaacggc agcgatgtat tgatcctctg gtggccgctg 300
106 ccgctcggtc ccggcagtta tccgcagggt atcgaacggt tgtttgaact ggccgggaatg 360
107 acgttgccgt cgctatccat agcaccgacg gcgcgtccgc agacagggaa cggacgcgcc 420
108 cgatcattaa gataaaggcg gcttttttta ttgcaaaacg gtaacgggtg ggaaccgttt 480
109 caccgtcggc gtcactcagt aacaagtatc catcatgatg cctacatcgg gatcggcggtg 540
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115 tttcggcaat ggccgcgagg gtgcgagcaa cctgctatcc gtaccgaaat ccggcgcgca 900
116 tgcgttgtca aaaatgtttg ataaagcgct ggacgatctg ctgggtcatg acaccgtgac 960
117 caagctgact aa'ccagagca accaactggc taattcaatg ctgaacgcca gccagatgac 1020
118 ccagggtaat atgaatgcgt tcggcagcgg tgtgaacaa'c gcactgtcgt ccattctcgg 1080
119 caacgggtct ggccagtcga tgagtggctt ctctcagcct tctctggggg caggcggttt 1140
120 gcagggcctg agcggcgcgg gtgcattcaa ccagttgggt aatgccatcg gcatggcggt 1200
121 ggggcagaa'at gctgcgctga gtgcgttgag taacgtcagc acccagctag acggtaacaa 1260
122 ccgccacttt gtagataaag aagatcgcgg catggcgaaa gagatcggcc agtttatgga 1320
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126 taccggcaat accaacctga acctgcgtgg gcggggcggt gcacgtctgg gtatcgatgc 1560
127 ggtgtcgtc ggcgataaaa tagccaacat gtcgtgggt aagctggcca acgcctgata 1620
128 atctgtgctg gcctgataaa gcggaaacga aaaaagagac ggggaagcct gtctcttttc 1680
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131 gtcgctcaga ttgcgcgggt gatggggaac gccgggtgga atatagagaa actcgccggc 1860

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Input Set : A:\C25011.app

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132 cagatggaga cacgtctgcg ataaatctgt gccgtaacgt gtttctatcc gcccttttag 1920
133 cagatagatt gcggtttcgt aatcaacatg gtaatgcggt tccgcctgtg cgccggccgg 1980
134 gatcaccaca atattcatag aaagctgtct tgcacctacc gtatcgcggg agataccgac 2040
135 aaaatagggc agtttttgcg tggatatccgt ggggtgttcc ggcctgacaa tcttgagttg 2100
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140 <211> LENGTH: 403
141 <212> TYPE: PRT
142 <213> ORGANISM: Erwinia amylovora
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148 Ile Gly Gly Ala Gly Gly Asn Asn Gly Leu Leu Gly Thr Ser Arg Gln
149 20 25 30
151 Asn Ala Gly Leu Gly Gly Asn Ser Ala Leu Gly Leu Gly Gly Gly Asn
152 35 40 45
154 Gln Asn Asp Thr Val Asn Gln Leu Ala Gly Leu Leu Thr Gly Met Met
155 50 55 60
157 Met Met Met Ser Met Met Gly Gly Gly Gly Leu Met Gly Gly Gly Leu
158 65 70 75 80
160 Gly Gly Gly Leu Gly Asn Gly Leu Gly Gly Ser Gly Gly Leu Gly Glu
161 85 90 95
163 Gly Leu Ser Asn Ala Leu Asn Asp Met Leu Gly Gly Ser Leu Asn Thr
164 100 105 110
166 Leu Gly Ser Lys Gly Gly Asn Asn Thr Thr Ser Thr Thr Asn Ser Pro
167 115 120 125
169 Leu Asp Gln Ala Leu Gly Ile Asn Ser Thr Ser Gln Asn Asp Asp Ser
170 130 135 140
172 Thr Ser Gly Thr Asp Ser Thr Ser Asp Ser Ser Asp Pro Met Gln Gln
173 145 150 155 160
175 Leu Leu Lys Met Phe Ser Glu Ile Met Gln Ser Leu Phe Gly Asp Gly
176 165 170 175
178 Gln Asp Gly Thr Gln Gly Ser Ser Ser Gly Gly Lys Gln Pro Thr Glu
179 180 185 190
181 Gly Glu Gln Asn Ala Tyr Lys Lys Gly Val Thr Asp Ala Leu Ser Gly
182 195 200 205
184 Leu Met Gly Asn Gly Leu Ser Gln Leu Leu Gly Asn Gly Gly Leu Gly
185 210 215 220
187 Gly Gly Gln Gly Gly Asn Ala Gly Thr Gly Leu Asp Gly Ser Ser Leu
188 225 230 235 240
190 Gly Gly Lys Gly Leu Gln Asn Leu Ser Gly Pro Val Asp Tyr Gln Gln
191 245 250 255
193 Leu Gly Asn Ala Val Gly Thr Gly Ile Gly Met Lys Ala Gly Ile Gln
194 260 265 270
196 Ala Leu Asn Asp Ile Gly Thr His Arg His Ser Ser Thr Arg Ser Phe
197 275 280 285
199 Val Asn Lys Gly Asp Arg Ala Met Ala Lys Glu Ile Gly Gln Phe Met
200 290 295 300
202 Asp Gln Tyr Pro Glu Val Phe Gly Lys Pro Gln Tyr Gln Lys Gly Pro

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203 305          310          315          320
205 Gly Gln Glu Val Lys Thr Asp Asp Lys Ser Trp Ala Lys Ala Leu Ser
206          325          330          335
208 Lys Pro Asp Asp Asp Gly Met Thr Pro Ala Ser Met Glu Gln Phe Asn
209          340          345          350
211 Lys Ala Lys Gly Met Ile Lys Arg Pro Met Ala Gly Asp Thr Gly Asn
212          355          360          365
214 Gly Asn Leu Gln Ala Arg Gly Ala Gly Gly Ser Ser Leu Gly Ile Asp
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220 Gly Ala Ala
224 <210> SEQ ID NO: 4
225 <211> LENGTH: 1288
226 <212> TYPE: DNA
227 <213> ORGANISM: Erwinia amylovora
229 <400> SEQUENCE: 4
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232 atcggcgggtg cgggcggaaa taacgggttg ctgggtacca gtcgccagaa tgctgggttg 180
233 ggtggcaatt ctgcactggg gctggcgggc ggtaatcaaa atgataccgt caatcagctg 240
234 gctggcttac tcaccggcat gatgatgat atgagcatga tggcgggtgg tgggctgatg 300
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236 ggactgtcga acgcgctgaa cgatatgtta ggcggttcgc tgaacacgct gggctcgaaa 420
237 ggcggcaaca ataccacttc aacaacaaat tccccgctgg accaggcgct ggggtattaac 480
238 tcaacgtccc aaaacgacga ttccacctcc ggcacagatt ccacctcaga ctccagcgac 540
239 ccgatgcagc agctgctgaa gatgttcagc gagataatgc aaagcctggt tggatgatgg 600
240 caagatggca cccagggcag ttctcttggg ggcaagcagc cgaccgaagg cgagcagaac 660
241 gcctataaaa aaggagtcac tgatgcgctg tcgggcctga tgggtaatgg tctgagccag 720
242 ctctctggca acgggggact gggagggtgg cagggcggta atgctggcac gggctctgac 780
243 ggttcgtcgc tgggcggcaa agggctgcaa aacctgagcg ggcgggtgga ctaccagcag 840
244 ttaggtaacg cgtgggttac cggatcgggt atgaaaagcg gcattcaggc gctgaatgat 900
245 atcggtaacg acaggcacag ttcaaccgct tctttcgtca ataaaggcga tcgggcgatg 960
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248 aagccagatg acgacggaat gacaccagcc agtatggagc agttcaacaa agccaagggc 1140
249 atgatcaaaa ggcccatggc gggtgatacc ggcaacggca acctgcaggc acgcggtgcc 1200
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255 <211> LENGTH: 341
256 <212> TYPE: PRT
257 <213> ORGANISM: Pseudomonas syringae
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264          20          25          30
266 Ser Lys Ala Leu Gln Glu Val Val Val Lys Leu Ala Glu Glu Leu Met

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267          35          40          45
269 Arg Asn Gly Gln Leu Asp Asp Ser Ser Pro Leu Gly Lys Leu Leu Ala
270          50          55          60
272 Lys Ser Met Ala Ala Asp Gly Lys Ala Gly Gly Gly Ile Glu Asp Val
273 65          70          75          80
275 Ile Ala Ala Leu Asp Lys Leu Ile His Glu Lys Leu Gly Asp Asn Phe
276          85          90          95
278 Gly Ala Ser Ala Asp Ser Ala Ser Gly Thr Gly Gln Gln Asp Leu Met
279          100          105          110
281 Thr Gln Val Leu Asn Gly Leu Ala Lys Ser Met Leu Asp Asp Leu Leu
282          115          120          125
284 Thr Lys Gln Asp Gly Gly Thr Ser Phe Ser Glu Asp Asp Met Pro Met
285          130          135          140
287 Leu Asn Lys Ile Ala Gln Phe Met Asp Asp Asn Pro Ala Gln Phe Pro
288 145          150          155          160
290 Lys Pro Asp Ser Gly Ser Trp Val Asn Glu Leu Lys Glu Asp Asn Phe
291          165          170          175
293 Leu Asp Gly Asp Glu Thr Ala Ala Phe Arg Ser Ala Leu Asp Ile Ile
294          180          185          190
296 Gly Gln Gln Leu Gly Asn Gln Gln Ser Asp Ala Gly Ser Leu Ala Gly
297          195          200          205
299 Thr Gly Gly Gly Leu Gly Thr Pro Ser Ser Phe Ser Asn Asn Ser Ser
300          210          215          220
302 Val Met Gly Asp Pro Leu Ile Asp Ala Asn Thr Gly Pro Gly Asp Ser
303 225          230          235          240
305 Gly Asn Thr Arg Gly Glu Ala Gly Gln Leu Ile Gly Glu Leu Ile Asp
306          245          250          255
308 Arg Gly Leu Gln Ser Val Leu Ala Gly Gly Gly Leu Gly Thr Pro Val
309          260          265          270
311 Asn Thr Pro Gln Thr Gly Thr Ser Ala Asn Gly Gly Gln Ser Ala Gln
312          275          280          285
314 Asp Leu Asp Gln Leu Leu Gly Gly Leu Leu Leu Lys Gly Leu Glu Ala
315          290          295          300
317 Thr Leu Lys Asp Ala Gly Gln Thr Gly Thr Asp Val Gln Ser Ser Ala
318 305          310          315          320
320 Ala Gln Ile Ala Thr Leu Leu Val Ser Thr Leu Leu Gln Gly Thr Arg
321          325          330          335
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328 <211> LENGTH: 1026
329 <212> TYPE: DNA
330 <213> ORGANISM: Pseudomonas syringae
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335 gtgaagctgg ccgaggaact gatgcgcaat ggtcaactcg acgacagctc gccattggga 180
336 aaactgttgg ccaagtcgat ggccgcagat ggcaaggcgg gcgcggtat tgaggatgtc 240
337 atcgtcgcgc tggacaagct gatccatgaa aagctcgtgtg acaacttcgg cgcgtctgcg 300

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VERIFICATION SUMMARY

DATE: 02/08/2001

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Input Set : A:\C25011.app

Output Set: N:\CRF3\02082001\I770693.raw

L:12 M:270 C: Current Application Number differs, Replaced Application Number

L:13 M:271 C: Current Filing Date differs, Replaced Current Filing Date